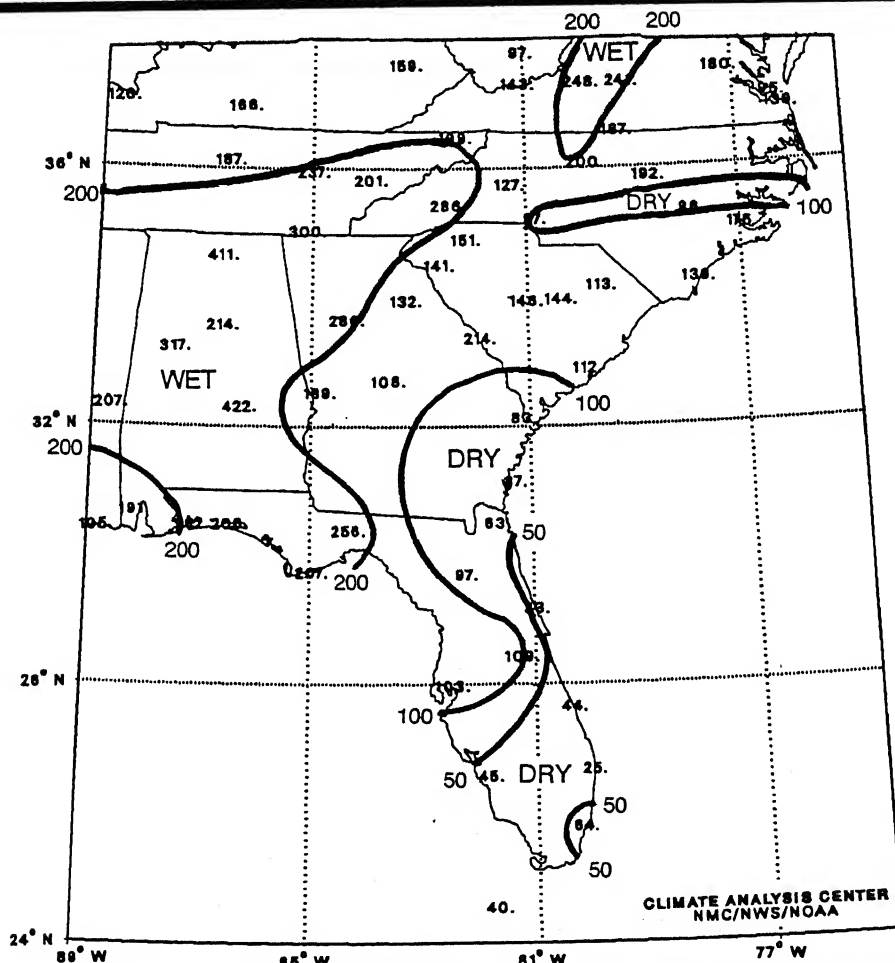


WEEKLY CLIMATE BULLETIN

No. 89/25

Washington, DC

June 24, 1989



PERCENT OF NORMAL PRECIPITATION FOR THE FOUR WEEK PERIOD ENDING SATURDAY, JUNE 24, 1989. RECURRENT HEAVY RAINS HAVE OCCURRED IN ALABAMA AND THE SOUTHERN APPALACHIANS WHILE UNUSUALLY DRY CONDITIONS PREVAILED ACROSS SOUTHERN FLORIDA. ISOPLETHS ARE DRAWN FOR 50%, 100%, AND 200% OF NORMAL PRECIPITATION.

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

WEEKLY CLIMATE BULLETIN

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|-------------------|---|
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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major global climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every 3 months).
- Global temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

To receive copies of the Bulletin or change mailing address, write to:

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GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF JUNE 24, 1989

1. North Central United States:

AREA STILL DRY.

Rainfall amounts approaching 76 mm did not eliminate long-term precipitation deficits. Driest conditions were reported in South Dakota, Minnesota, and Iowa (see U.S. Weekly Climate Highlights) [14 weeks].

2. Northeastern United States:

MORE HEAVY RAIN.

Heavy showers and thunderstorms dumped up to 140 mm of rain across the eastern United States as very wet conditions persisted (see U.S. Weekly Climate highlights) [8 weeks].

3. Gulf Coast:

WET WEATHER CONTINUES.

Flooding remained a problem as copious rains, exceeding 300 mm in a few locations, fell from recurrent showers and thunderstorms (see U.S. Weekly Climate Highlights) [6 weeks].

4. Eastern Mexico:

HEAT WAVES ENDS.

Near normal temperatures prevailed across the region [Ended at 5 weeks].

5. Ecuador:

TORRENTIAL RAINS.

Up to 57 mm of rain fell at many locations in Ecuador. The press reported considerable flooding throughout the country [Episodic Event].

6. British Isles:

DRY CONDITIONS DEVELOP.

Little or no precipitation was reported across the country as unusually dry weather prevailed [4 weeks].

7. Sahelian West Africa:

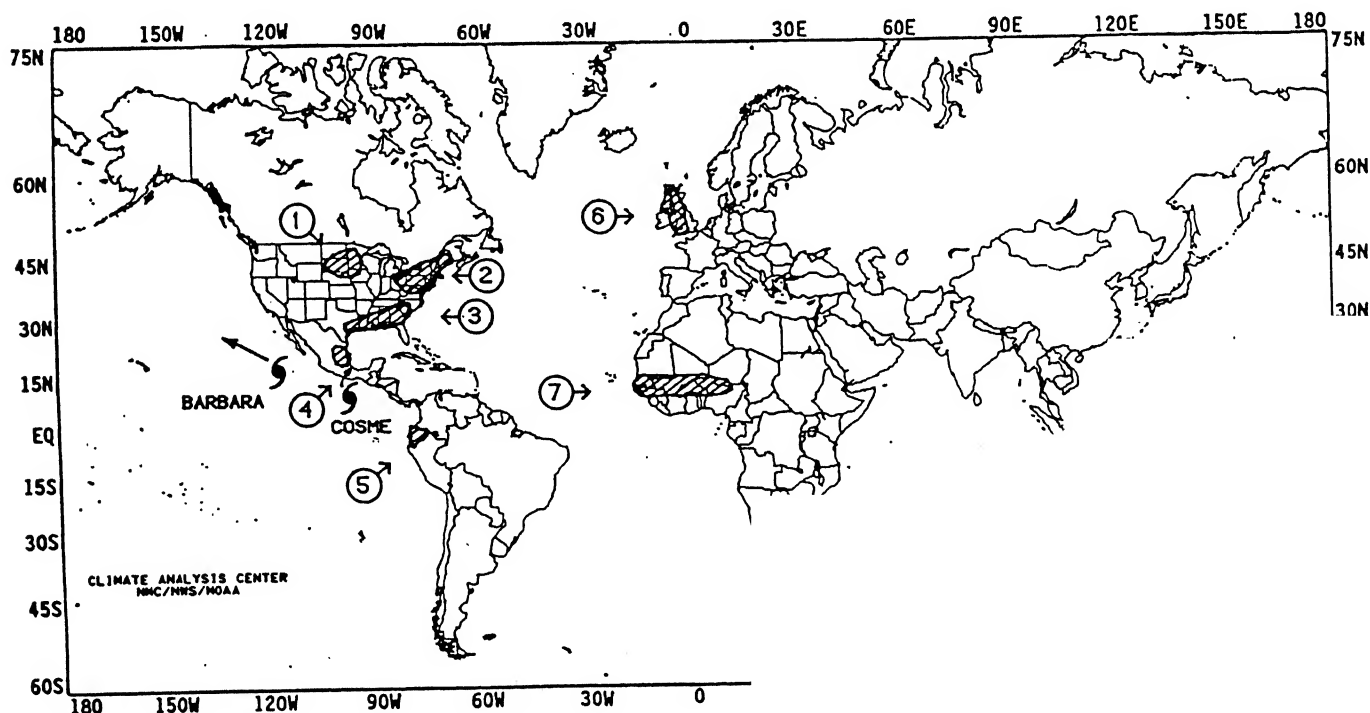
HOT CONDITIONS END.

Near normal temperatures returned to the area [Ended at 7 weeks].

8. Southeastern Australia:

MORE RAINS.

Precipitation amounts approached 150 mm along the southeastern coast as wetness returned [15 weeks].



EXPLANAT

TEXT: Approximate duration of anomalies is in brackets. Prev week's values.

MAP: Approximate locations of major anomalies and episodic current two week temperature anomalies, four week precipitat

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF JUNE 18 THROUGH JUNE 24, 1989.

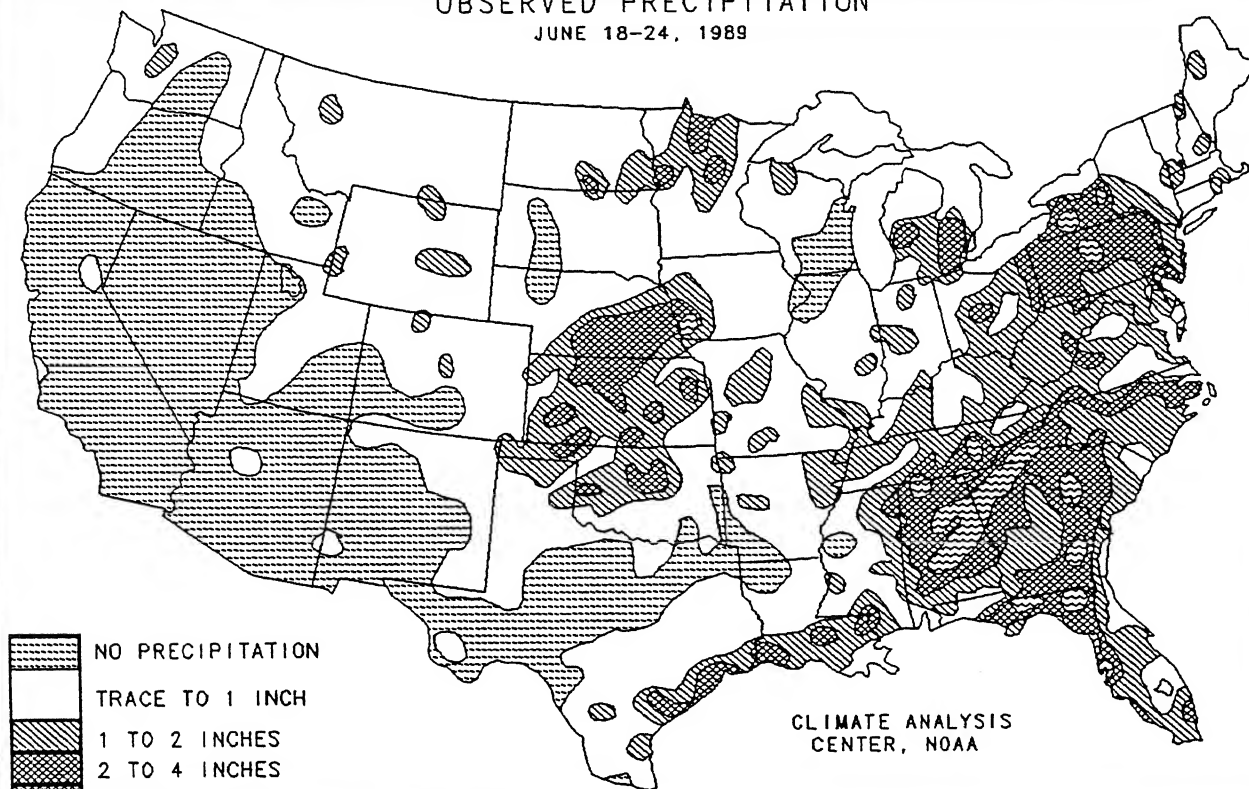
After seven weeks of excessive rainfall, dryness finally returned to the southern Plains. An upper-level ridge pushed into the region from the desert Southwest, keeping areas south of central Oklahoma dry by steering systems of inclement weather to the north. Most of last week's precipitation fell in conjunction with one of two frontal systems. The first one was a poorly defined stationary front stretching from Lake Ontario southward along the Appalachian Mountains and into southern Florida. The second was a cold front which quickly moved from the northern Rockies to the northern and central Plains by midweek, then crawled eastward to a position from the Great Lakes to the middle Mississippi Valley by week's end. The eastern front brought scattered but intense thunderstorms to most of the eastern seaboard throughout the week, with only New England and the Florida Keys escaping at least isolated heavy rains. The other front generated heavy rains in much of the northern and central Plains and western Corn Belt regions, including parts of Iowa and Nebraska where any relief from long-term dryness is helpful. Unfortunately, much of the precipitation was accompanied by severe weather. Inundating cloudbursts, dropping several inches of rain in one or two hours, affected isolated parts of the mid-Atlantic, southern Appalachians, and middle Missouri Valley. Damaging winds, large hail, and scattered tornadoes also battered parts of the northern Plains as well as sections of the South Atlantic Coast. Behind the Plains frontal system, an unseasonably cool high pressure system dominated the northern and central Rockies most of the week. In contrast, very warm weather continued along the Pacific Coast and in the desert Southwest, and warm air returned to the Great Lakes and Northeast.

According to reports from the River Forecast Centers, the heaviest precipitation fell in the southern Appalachians and adjacent sections of the Southeast. Reports of over 12 inches were received from eastern Alabama while amounts of 5 to 10 inches were widespread across the region. Scattered reports between 2 and 5 inches, with isolated values approaching 10 inches, came in from all parts of the Atlantic seaboard south of New York, including the Florida Peninsula, where six consecutive weeks of light precipitation had exacerbated severe long-term

dryness. Farther west, almost 8 inches of rain drenched southwestern Iowa, while much of the central Plains and middle Missouri Valley received 2 to 5 inches. This marked the first occurrence of widespread heavy precipitation across southwestern Iowa and southern Nebraska in three months. Elsewhere, widespread moderate to heavy rains fell from tropical thundershowers along the central and western Gulf Coast, and isolated heavy thunderstorms produced spotty reports of 2 or 3 inches in the northern Plains, Great Lakes, eastern Ohio Valley, and Mississippi Valley. Little or no rain fell in the eastern Corn Belt, southern Great Plains, New England, and from the High Plains westward to the Pacific Ocean. In Alaska, very heavy rain inundated the south-central coast while dry weather dominated the southeastern panhandle. In addition, slightly below normal precipitation continued across Hawaii.

Hot weather dominated the Pacific Coast and desert Southwest, where some areas experienced their fourth consecutive week of above normal temperatures. The greatest positive departures (between +5°F and +7°F) occurred in Arizona as well as the San Francisco Bay Area. Temperatures 2°F to 4°F above normal were reported elsewhere from New Mexico to California and up the Pacific Coast. Unseasonably high temperatures also affected the upper half of the Mississippi Valley, Great Lakes, Ohio Valley, and eastern seaboard north of the Carolinas. A band of stations from northern Pennsylvania to central Maine reported temperatures 5°F to 7°F above normal, while +4°F to +6°F departures were common in parts of the Upper Mississippi Valley and northern Great Lakes. In the remainder of the warm areas, temperatures 2°F to 4°F were observed. In contrast, the northern and central Rockies, central Plains, and the wetter portions of the Southeast experienced a cool week. Temperatures 7°F to 9°F below normal affected southwestern Kansas, while departures of -4°F to -7°F were widespread in northern sections of the Rockies, High Plains, and Intermountain West. Temperatures 2°F to 4°F below normal occurred in the Southeast, central Plains, and Cascades. Near normal temperatures covered the rest of the contiguous 48 states, as well as Hawaii and all but extreme western Alaska, where slightly milder than normal conditions persisted.

OBSERVED PRECIPITATION JUNE 18-24, 1989



DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F) JUNE 18-24, 1989

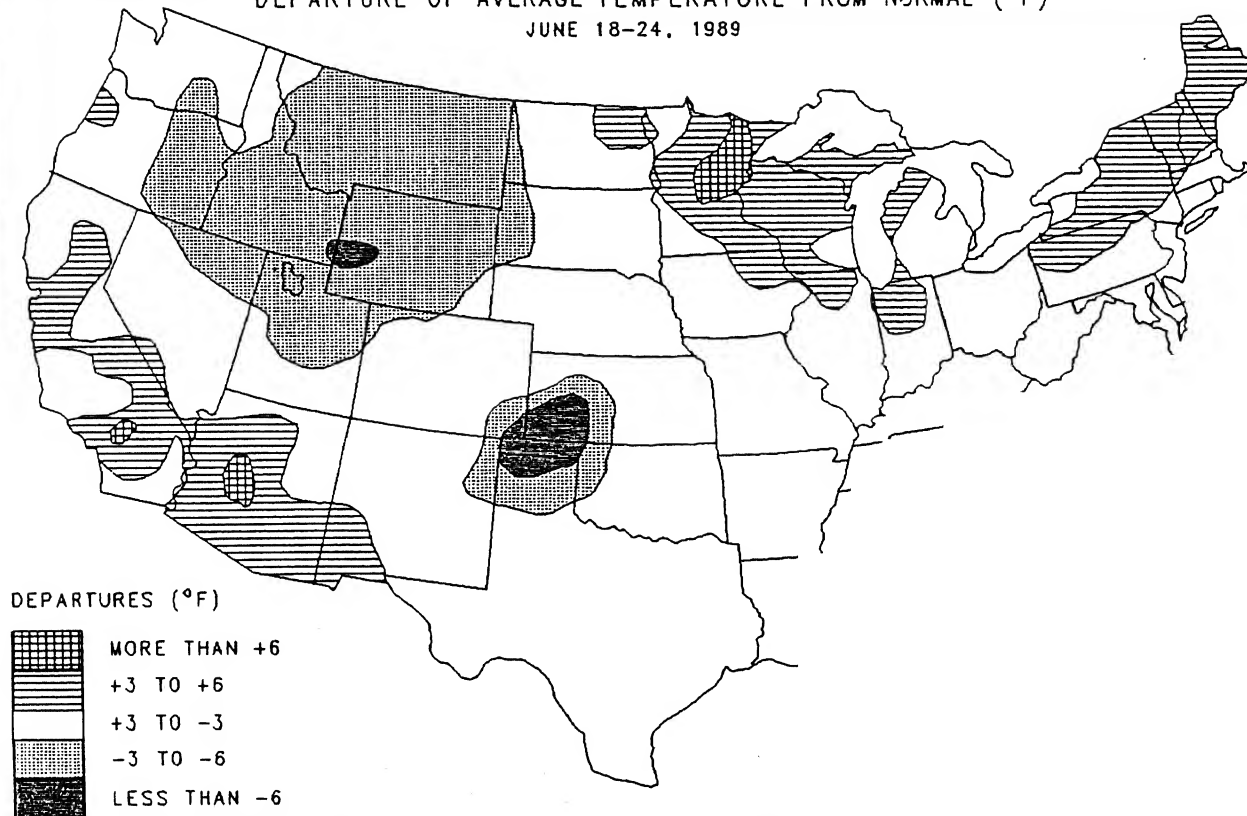


TABLE 1. Selected stations with 3.00 or more inches of precipitation for the week.

| <u>STATION</u> | <u>TOTAL</u> <u>(INCHES)</u> | <u>STATION</u> | <u>TOTAL</u> <u>(INCHES)</u> |
|---------------------------|---------------------------------|----------------------|---------------------------------|
| TALLAHASSEE, FL | 5.64 | TOLEDO, OH | 3.59 |
| DOVER AFB, DE | 5.51 | OMAHA/OFFUTT AFB, NE | 3.55 |
| HOUSTON/ELLINGTON AFB, TX | 5.48 | BRADFORD, PA | 3.48 |
| TAMPA/MAC DILL AFB, FL | 5.05 | ASHEVILLE, NC | 3.43 |
| HUNTSVILLE, AL | 5.00 | TAMPA, FL | 3.39 |
| CORDOVA/MILE 13, AK | 4.81 | ATLANTA/C. BROWN, GA | 3.31 |
| NEW BERN, NC | 4.59 | GRAND RAPIDS, MI | 3.29 |
| MONTGOMERY, AL | 4.49 | GAINESVILLE, FL | 3.28 |
| AUGUSTA, GA | 4.15 | MIAMI, FL | 3.28 |
| CHATTANOOGA, TN | 3.94 | ANNISTON, AL | 3.27 |
| BIRMINGHAM, AL | 3.86 | TUSCALOOSA, AL | 3.17 |
| ATLANTA, GA | 3.78 | WILLOW GROVE NAS, PA | 3.13 |
| HOUSTON/HOBBY, TX | 3.74 | FORT MYERS, FL | 3.01 |
| LAKE CHARLES, LA | 3.73 | LINCOLN, NE | 3.00 |
| DUBOIS, PA | 3.63 | | |

TABLE 2. Selected stations with temperatures averaging 4.0°F or more ABOVE normal for the week.

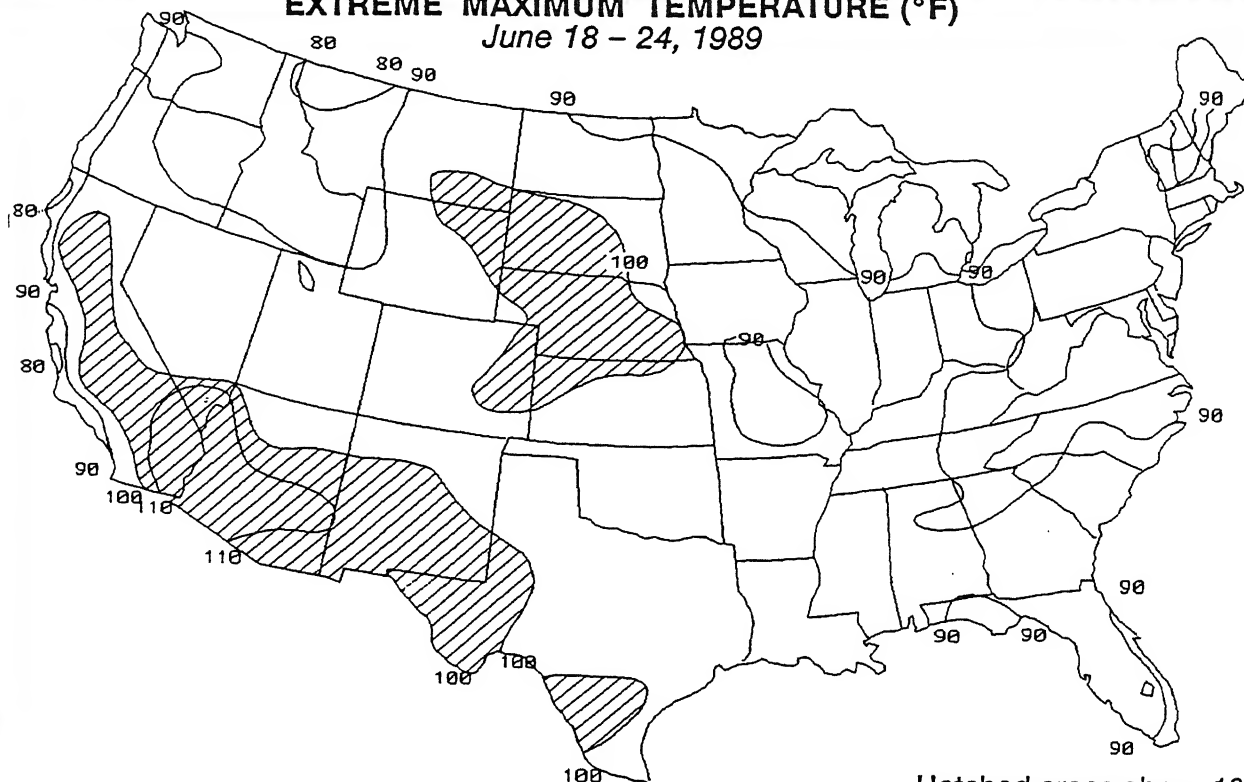
| <u>STATION</u> | <u>DEPARTURE</u> <u>(°F)</u> | <u>AVERAGE</u> <u>(°F)</u> | <u>STATION</u> | <u>DEPARTURE</u> <u>(°F)</u> | <u>AVERAGE</u> <u>(°F)</u> |
|----------------------------|---------------------------------|-------------------------------|------------------------------|---------------------------------|-------------------------------|
| VICTORVILLE/GEORGE AFB, CA | +6.8 | 79.7 | KOTZEBUE, AK | +5.0 | 50.6 |
| PRESCOTT, AZ | +6.7 | 75.1 | TUCSON/DAVIS-MONTHAN AFB, AZ | +4.9 | 88.3 |
| PHOENIX, AZ | +6.6 | 94.8 | MINNEAPOLIS, MN | +4.8 | 74.4 |
| RUMFORD, ME | +6.6 | 70.4 | LEBANON, NH | +4.8 | 70.1 |
| HANCOCK/HOUGHTON CO, MI | +6.4 | 66.8 | MARQUETTE, MI | +4.8 | 65.9 |
| ST. CLOUD, MN | +6.3 | 72.9 | MT. WASHINGTON, NH | +4.7 | 50.8 |
| SAN FRANCISCO, CA | +6.3 | 67.6 | EAU CLAIRE, WI | +4.6 | 72.1 |
| DULUTH, MN | +6.3 | 66.9 | GLENS FALLS, NY | +4.6 | 70.9 |
| BURLINGTON, VT | +6.1 | 72.6 | BINGHAMTON, NY | +4.6 | 70.4 |
| INTERNATIONAL FALLS, MN | +6.1 | 68.8 | BRADFORD, PA | +4.5 | 66.9 |
| ROME/GRIFFISS AFB, NY | +5.8 | 72.5 | BARROW, AK | +4.5 | 39.8 |
| TUCSON, AZ | +5.6 | 89.9 | LA CROSSE, WI | +4.4 | 74.3 |
| ALEXANDRIA, MN | +5.5 | 72.2 | SACRAMENTO, CA | +4.3 | 76.6 |
| GLENDAL/LUKE AFB, AZ | +5.4 | 91.7 | PARK FALLS, WI | +4.3 | 68.1 |
| DOUGLAS, AZ | +5.3 | 83.5 | YUMA, AZ | +4.2 | 93.1 |
| MONTPELIER, VT | +5.3 | 68.7 | SYRACUSE, NY | +4.2 | 72.1 |
| WAUSAU, WI | +5.2 | 71.3 | MUSKEGON, MI | +4.2 | 71.2 |
| BANGOR, ME | +5.2 | 69.3 | ESCENABA, MI | +4.2 | 66.3 |
| PELLSTON, MI | +5.2 | 67.5 | ROCKFORD, IL | +4.1 | 74.5 |
| UTICA, NY | +5.1 | 71.7 | PORTLAND, ME | +4.1 | 68.0 |
| ALBANY, NY | +5.0 | 73.2 | CARIBOU, ME | +4.1 | 66.1 |

TABLE 3. Selected stations with temperatures averaging 4.0°F or more BELOW normal for the week.

| <u>STATION</u> | <u>DEPARTURE</u> <u>(°F)</u> | <u>AVERAGE</u> <u>(°F)</u> | <u>STATION</u> | <u>DEPARTURE</u> <u>(°F)</u> | <u>AVERAGE</u> <u>(°F)</u> |
|-----------------------------|---------------------------------|-------------------------------|--------------------|---------------------------------|-------------------------------|
| GARDEN CITY, KS | -8.8 | 67.4 | GREAT FALLS, MT | -4.9 | 58.4 |
| DODGE CITY, KS | -7.1 | 69.3 | CASPER, WY | -4.9 | 59.8 |
| POCATELLO, ID | -6.9 | 57.3 | MISSOULA, MT | -4.8 | 56.3 |
| MILES CITY, MT | -6.2 | 62.0 | BOISE, ID | -4.8 | 62.8 |
| LANDER, WY | -6.1 | 57.9 | SHERIDAN, WY | -4.6 | 58.8 |
| BUTTE, MT | -5.6 | 51.2 | BILLINGS, MT | -4.5 | 61.1 |
| GAGE, OK | -5.3 | 73.0 | AMARILLO, TX | -4.4 | 71.9 |
| ROCK SPRINGS/SWEETWATER, WY | -5.1 | 56.6 | HAVRE, MT | -4.3 | 60.3 |
| BURNS, OR | -5.0 | 57.1 | OGDEN/HILL AFB, UT | -4.3 | 64.0 |
| IDAHO FALLS, ID | -5.0 | 57.4 | RAPID CITY, SD | -4.0 | 63.1 |

EXTREME MAXIMUM TEMPERATURE (°F)

June 18 - 24, 1989

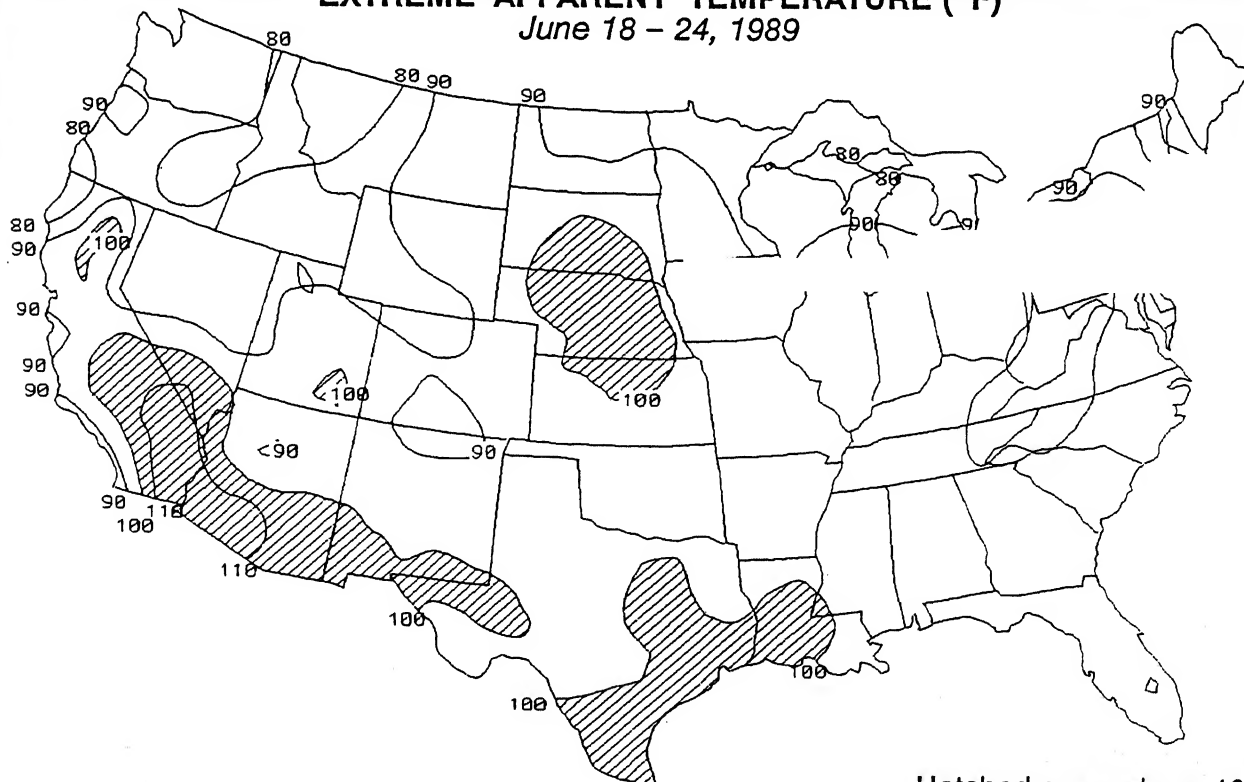


Hatched areas above 100°F

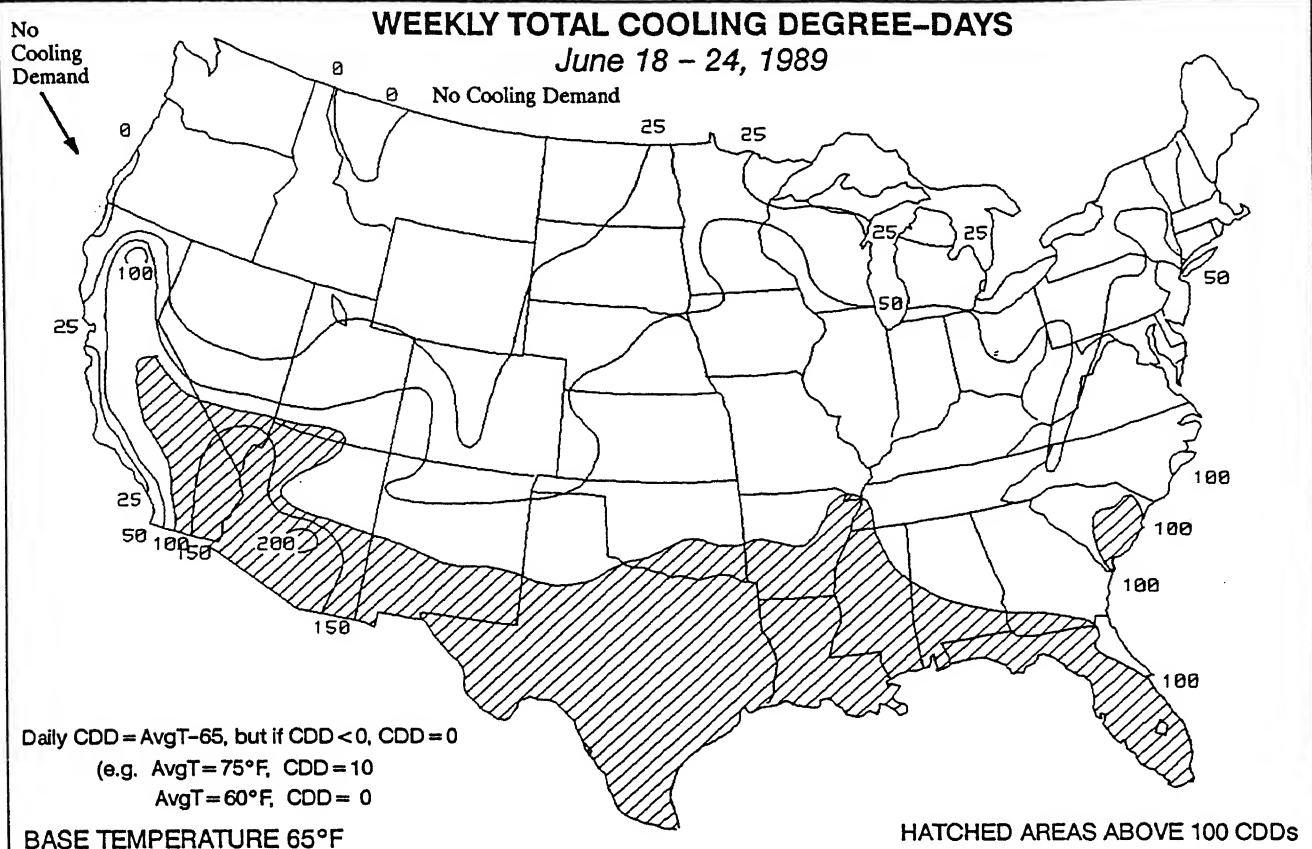
The Southwest, west-central Great Plains, and interior California valleys observed maximum temperatures above 100°F (top). These same areas, in addition to the moisture-laden regions of the western Gulf States, recorded maximum apparent temperatures greater than 100°F (bottom).

EXTREME APPARENT TEMPERATURE (°F)

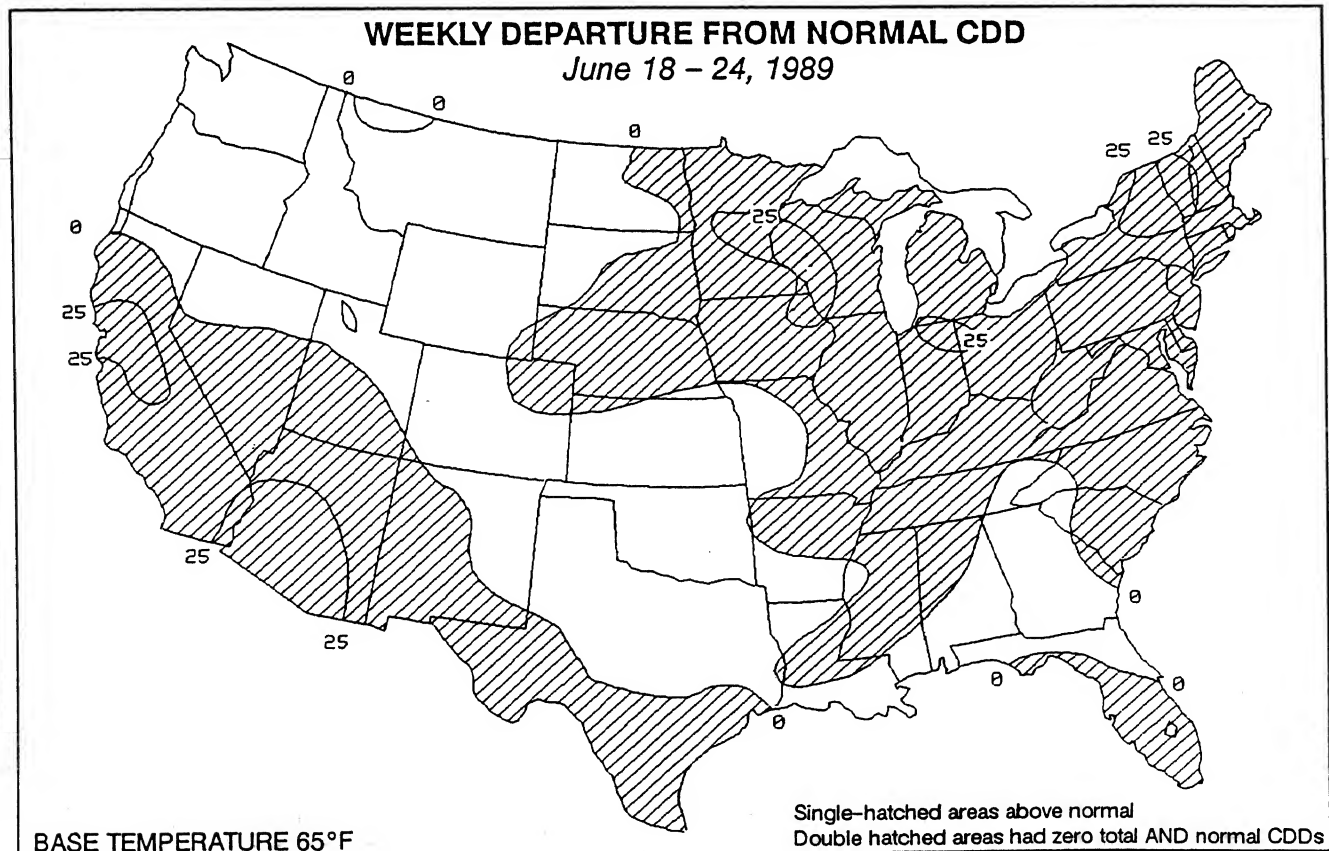
June 18 - 24, 1989



Hatched areas above 100°F

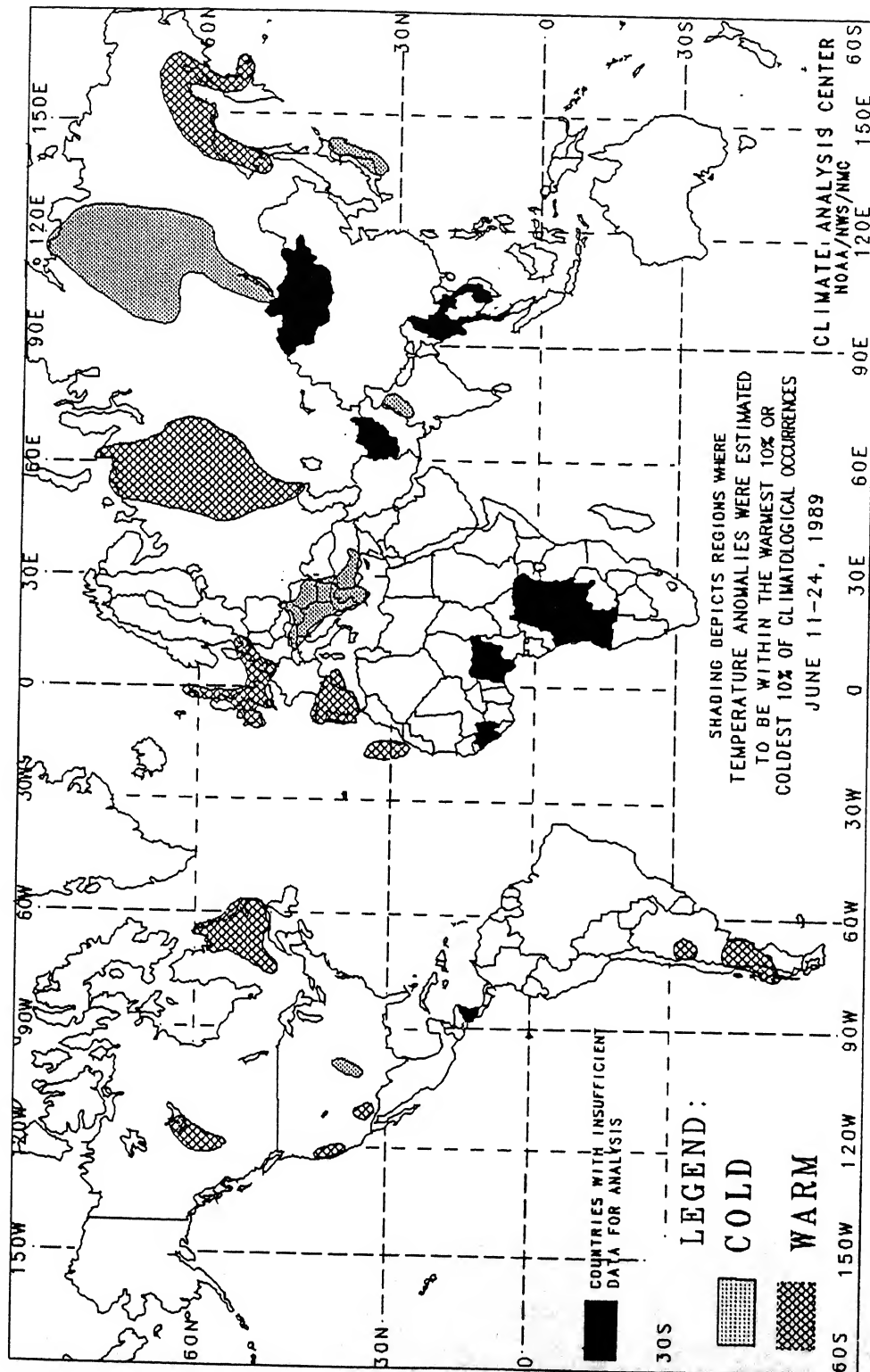


Southern regions of the lower 48 recorded weekly total CDD's above 100 (top), while unseasonably warm weather in the East and Southwest resulted in above normal air-conditioning usage in those areas (bottom).



GLOBAL TEMPERATURE ANOMALIES

2 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

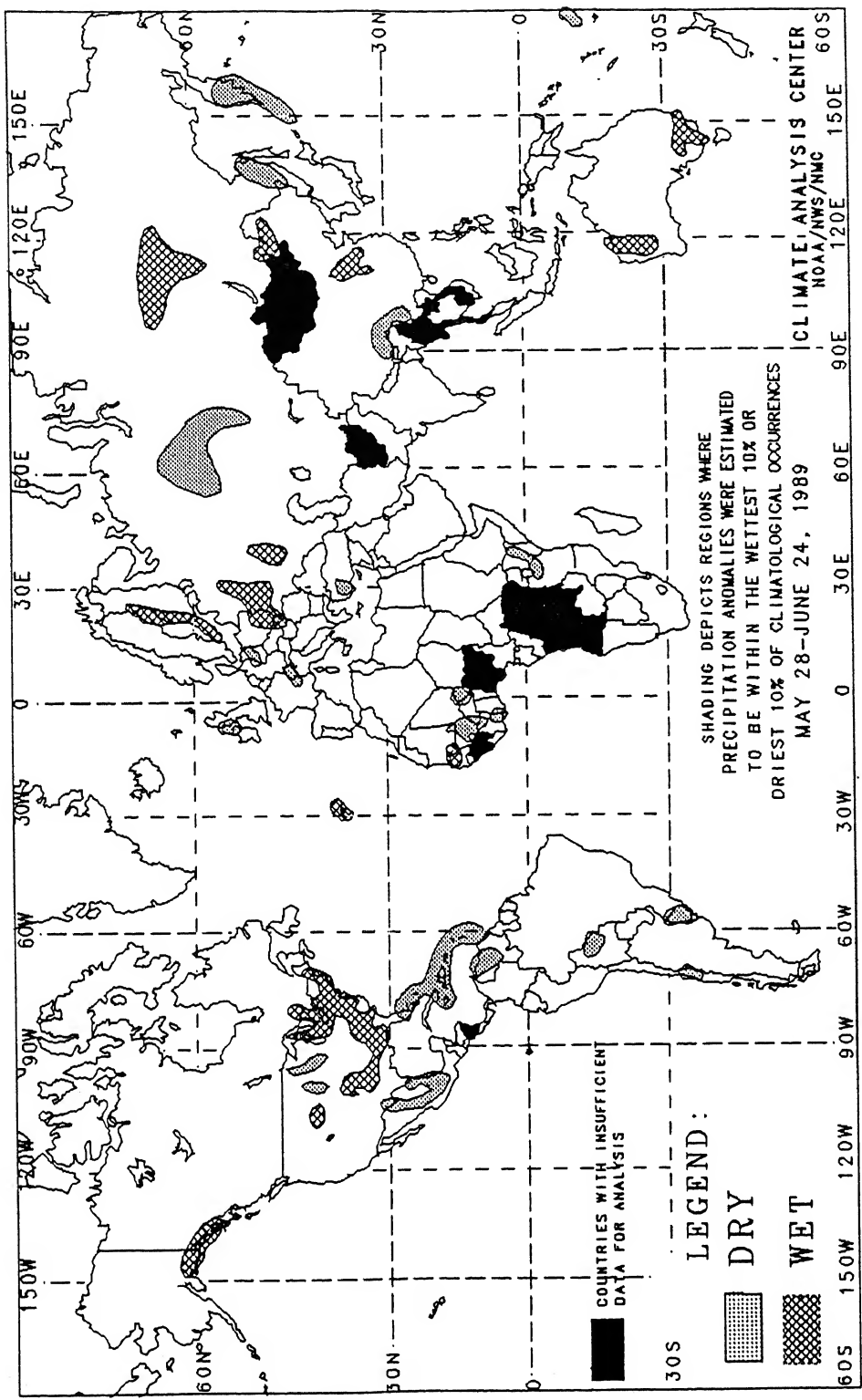
Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

GLOBAL PRECIPITATION ANOMALIES

4 WEEKS



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South Africa, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

